ABSTRACT

A voltage isolation buffer, comprising a pilot channel having a first Hall effect element and a data channel having a second Hall effect element is disclosed. The pilot channel is preferably AC coupled, and the data channel is preferably DC coupled. The voltage isolation buffer may comprise a means for calibration, which may be configurable to calibrate the voltage generated by the second Hall effect element based on the information from the first Hall effect element. A bi-directional voltage isolation buffer is also disclosed, comprising a first integrated circuit and a second integrated circuit. The first integrated circuit comprises a DC coupled Hall effect sensor and an AC coupled Hall effect sensor. The second integrated circuit comprises an AC coupled Hall effect sensor and a DC coupled Hall effect sensor. A method for transmitting data across a voltage isolation barrier is also disclosed comprising the steps of generating a first Hall voltage signal, AC coupling the first Hall voltage signal, generating a second Hall voltage signal, DC coupling the second Hall voltage signal, and calibrating the second Hall voltage signal, wherein the step of calibrating is controlled by the first Hall voltage signal.